APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,095	07/10/2003	Bryan K. Bullis	RPS920010140US1	1962

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EXAMINER
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ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
	10/617,095	BULLIS ET AL.
Office Action Summary	Examiner	Art Unit	
	Tri H. Phan	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>18 January 2007</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-18</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-4,6 and 8-18</u> is/are rejected.

7)☒ Claim(s) <u>5 and 7</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Communication(s)

1.   This Office Action is in response to the Application filed on July 10th, 2003. Claims 1-18

are now pending in the application.

Claim Objections

2.   Claims 1-2 are objected to because of the following informalities:

In claim 1, line 7, the word "a" in front of "search engine" should be correct to -- the --

for clarity.

In claim 2, line 7, the word "a" in front of "tic period" should be correct to -- the -- for

clarity.

Appropriate corrections are required.

Double Patenting

3.   The nonstatutory double patenting rejection is based on a judicially created doctrine
grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or
improper timewise extension of the "right to exclude" granted by a patent and to prevent possible
harassment by multiple assignees.   A nonstatutory obviousness-type double patenting rejection
is appropriate where the conflicting claims are not identical, but at least one examined
application claim is not patentably distinct from the reference claim(s) because the examined
application claim is either anticipated by, or would have been obvious over, the reference
claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re
Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225
USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re
Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163
USPQ 644 (CCPA 1969).
        A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may
be used to overcome an actual or provisional rejection based on a nonstatutory double patenting

ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4.   Claims 8-9 of the current application are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 9 of copending Application No. 10/255,861 (hereinafter refer as '5861'). Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1, 6 and 9 of '5861' and claims 8-9 of the current application teach essentially the same system with limitations such as calendar search engine ..., array of calendars ..., controller ... within time interval (see claim 8) and scheduler (see claim 9); wherein, it is obvious that the second set of non-time based calendar is the "memory ... that was not searched within the time interval" (see claim 8).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6.   Claims 1-4, 6, 8-9 and 11-18 are rejected under 35 U.S.C. 102(e) as being anticipated by **Bullis et al.** (U.S.2003/0058868; hereinafter refer as '**Bullis**').

- In regard to claim 1, **Bullis** discloses a *method comprising acts of*

providing a scheduler ('scheduler' in figs. 1-4) *including a plurality of calendars used to*

determine when a frame is to be moved from a flow queue ('calendar array 50' in fig. 5);

providing at least one search engine to search the calendars ('calendar search engine 54'
in fig. 5);

defining a tic period within which searching is to be completed ('TIC cycle'; for example
see page 4, para [0055]);

determining calendars to be searched within the tick period;

searching with a search engine the calendars so determined (for example see page 5,
para [0066-0067]) *; and*

*postponing search of any calendars so determined if postponed calendars could not be
searched within the tick period* (for example see figs. 6-7; wherein the control FSM together with
the final decision selector logic determine which calendar can be searched within the period or
not, e.g. *"postponed calendar"*).

- Regarding claim 2, **Bullis** further discloses, wherein *the act of searching the postponed
calendars in a tick period subsequent to the one in which searching was postponed* (for example
see page 7, para [0081]; wherein the delay circuit provides delay cycle for searching).

- In regard to claims 3-4, **Bullis** further discloses, wherein *the time based calendars are
searched every tick cycle and non-time based calendars are searched when an item is attached
or detached from a calendar location* (for example see page 2, para [0026]; page 5, paras [0066-
0067]).

- Regarding claim 6, **Bullis** further discloses, wherein the method of claim 1 further

including the act of tagging calendars whose search was postponed (for example see page 5,

paras [0060-0065]; wherein the control finite attach/detach the type of search).

- In regard to claim 8, **Bullis** discloses, a *system for use in a network device comprises:*

a plurality of calendars with each calendar having a plurality of independent locations

('time-based calendars' and 'non-time based calendars' in fig. 5);

at least one search engine for searching said calendars operatively coupled to the

plurality of calendars ('calendar search engine 54' in fig. 5);

a controller operatively coupled to the calendars and the calendar search engine, said

controller indicating calendars to be searched ('control FSM 52 ' in fig. 5; for example see page

5, paras [0060-0066]; *and*

within a time interval ('TIC interval'; for example see page 4, para [0055]); *and*

a memory for storing identification of at least one calendar that was not searched within

the time interval ('non-time based calendars' in the calendar array in fig. 5; for example see page

5, para [0068]; wherein the current working pointer array provides the CP pointer to the non-time

based calendar, e.g. *"not searched within the time interval"*).

- Regarding claim 9, **Bullis** also discloses the system of claim 8 further includes *a*

scheduler for attaching identification numbers of flow queues to selected ones of the plurality of

independent locations ('scheduler' in figs. 1-4; for example see page 4, para [0057]; wherein the

queue IDs, e.g. *"identification numbers of flow queues"*, are attached to specific locations).

- In regard to claims 11 and 14, **Bullis** further discloses the apparatus further includes *a first array for storing at least one indicia indicating a winning calendar* ('logical bit, e.g. *"indicia"*, stored in the winner valid array 58' in fig. 5, which can be either CP or CT as disclosed in page 5, para 0068).

- Regarding claim 12-13 and 15, **Bullis** further discloses *a second array for storing at least one indicia indicating a winning location within said winning calendar with is a multi-bit representation* ('CP, e.g. *"indicia"*, stored in the current working pointer array 56' in fig. 5); and *final decision selector logic* ('final decision selector logic 62' in fig. 5).

- In regard to claim 16-18, **Bullis** further discloses the cal_num counter (*"counter"*) which keeps track attached input of the time base calendar (*"FIFO buffer"*) as disclosed in page 6, para [0072].

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claim 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bullis et al.**
(U.S.2003/0058868).

- In regard to claim 10, **Bullis** fails to explicitly disclose wherein the plurality of
independent locations are numbered 0 through 2^{m-1}, where m = number of bits required to
represent number of location in calendar; however, it is obvious that specific numbers of
calendar locations are the choices of system engineering, which changes from system to system
and depends on the needs of that system.

Thus, it would have been obvious to those skilled in the art at the time of the invention
was made to define specific range of number of calendar location into **Bullis**'s calendar locations
to fit into demands and needs of the system, as specific choices.

Allowable Subject Matter

9.   Claims 5 and 7 are objected to as being dependent upon a rejected base claim, but would
be allowable if rewritten in independent form including all of the limitations of the base claim
and any intervening claims.

Conclusion

10.   The prior art made of record and not relied upon is considered pertinent to applicant's
disclosure.

Jinzaki, Akira (U.S.6,742,107), **Matsuo et al.** (U.S.2003/0227925) and **Rumph, Darryl
J.** (U.S.7,020,657) are all cited to show devices and methods for improving search techniques in

the packet processing in telecommunication architectures, which are considered pertinent to the

claimed invention.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Tri H. Phan, whose telephone number is (571) 272-3074. The

examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chi H. Pham can be reached on (571) 272-3179.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(571) 273-8300

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street,

Alexandria, VA 22314.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the Technology Center 2600 Customer Service Office, whose telephone

number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tri H. Phan
June 25, 2007